

Readopt with amendment Part Env-Ws 388, eff. 5-12-09 (doc. #9460, INTERIM), and renumber as Part Env-Wq 403, to read as follows:

PART ~~Env-Ws 388~~ ***Env-Wq 403 MAJOR-LARGE*** GROUNDWATER WITHDRAWALS

~~Env-Ws 388.01~~ ***Env-Wq 403.01 Purpose.*** The purpose of these rules is to ***establish procedures and standards for development of a large groundwater withdrawal.*** ~~implement RSA 485:3 and RSA 485-C by:~~

- ~~(a) Establishing criteria for designating a major withdrawal;~~
- ~~(b) Establishing permitting procedures and requirements for a major withdrawal;~~
- ~~(c) Establishing procedures and criteria for ensuring water conservation and identifying the need for a major withdrawal;~~
- ~~(d) Establishing procedures and criteria for identifying and addressing impacts which occur as a result of a permitted major withdrawal; and~~
- ~~(e) Establishing procedures and standards for the denial of or reduction in a major withdrawal.~~

Env-Wq 403.02 Applicability. These rules shall apply to:

- (a) The development of a new source of groundwater that constitutes a large groundwater withdrawal;***
- (b) The renewal of an existing large groundwater withdrawal permit;***
- (c) The development of a replacement well for an existing large groundwater withdrawal; and***
- (d) The new extraction or drainage of groundwater from a shaft or hole in the earth that equals or exceeds 57,600 gallons per day in any 24-hour period, other than for a public water system.***

~~Env-Ws 388.02~~ ***Env-Wq 403.03 Definitions.***

- ~~(a) "Available water" means the arithmetic difference between water supply and demand.~~
- ~~(ba) "Bottled water" means "bottled water" that is placed in a sealed container or packaged and is offered for sale for human consumption or other consumer uses as defined in He P-2100 Env-Dw 303.03.~~
- ~~(eb) "Community water system" means "community water system" as defined in RSA 485:1-a, I, namely "a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents."~~
- ~~(dc) "Conceptual hydrologic model" means a working hypothesis describing each component of the hydrologic regime—description, incorporating published information, available field data, and conservative assumptions, of geology, aquifer hydraulics, and mechanisms and rate of recharge for the potential impact area.~~
- ~~(ed) "Cone of depression" means a depression in the potentiometric surface of a body of groundwater that has the general shape of an inverted cone and develops around a well from which water is being withdrawn and corresponds to the zone of influence of the withdrawal.~~
- ~~(fe) "Department" means the department of environmental services.~~
- ~~(gf) "Downgradient area" means the area where water taken by the withdrawal would flow if the withdrawal did not operate—described in RSA 485-C:21, V-e(c).~~

(~~hg~~) “Groundwater” means “groundwater” as defined in RSA 485-C:2, VIII, namely, “subsurface water that occurs beneath the water table in soil and geologic formations.”

(~~i~~**h**) “Hydrologic cycle” means the pathways along which water moves through the environment.

(~~j~~**i**) “Hydrology” means the occurrences, movement, and chemical nature of water in the natural environment.

(~~k~~) —“Large production well” means a wellhead that produces 57,600 gallons or more per 24 hours for a community water system.

(~~l~~**j**) “Large *groundwater* withdrawal” means “***large groundwater withdrawal***” as defined in ***RSA 485-C:2, IX-a, namely*** “any year-round or seasonal withdrawal ~~of from~~ groundwater ~~from a~~ wellhead installed after July 1998, not associated with a temporary short-term use such as contaminated site remediation or construction de-watering, and where the maximum 24-hour withdrawal is ~~of~~ 57,600 gallons or more ***of water in any 24-hour period at a single property or place of business.***”

(~~m~~**k**) “Permitted withdrawal” means a large *groundwater* withdrawal ***for which a*** permitted ***has been issued*** under ~~these rules~~ ***Env-Wq 403 or predecessor rules in Env-Ws 387 or Env-Ws 388.***

(**l**) “***Potential impact area***” means ***the area that is required to be assessed for potential impacts under RSA 485-C:21, V-e.***

(~~n~~**m**) “Potentiometric surface” means the surface where groundwater pressure is equal to atmospheric pressure.

(~~on~~) “Public water system” means “public water system” as defined by RSA 485:1-a, XV., ~~namely~~ “a system for the provision to the public of piped water for human consumption, if such systems have at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days of the year.”

(**o**) “***Qualified professional***” means ***an individual who by education and experience is able to quantitatively analyze and interpret hydrology.***

(**p**) “Recharge area” means the land surface from which water reaching a location or region originates.

(**q**) “Registered water user” means any water user who is ~~required to~~ registered and ***who*** reports water usage in accordance with ~~Env-Wr 700, that is, all withdrawals over 20,000 gallons per day for any purpose~~ ***RSA 488:3 and Env-Wq 2102.***

(**r**) “Replacement well” means “***replacement well***” as defined in ***RSA 485-C:2, XIII-a, namely*** “a new ~~source well~~ installed to replace ***or back-up*** an existing ~~source well~~ that operates and impacts ***water users and*** water resources in ***substantially*** the same manner as the well that is being replaced.”

(~~s~~) —“Short-term use” means ~~the one-time occurrence of a withdrawal at a specific geographical location over a period of one year or less, except for contaminated site remediation, where the duration of the withdrawal extends for the time necessary to complete the objectives of the remediation.~~

(~~t~~) —“Stream reach” means ~~a section of a stream, river, or other water course.~~

(~~us~~) “Surface water” means “surface waters of the state” as defined in RSA 485-A:2, *XIV, namely “perennial and seasonal streams, lakes, ponds, and tidal waters within the jurisdiction of the state, including all streams, lakes, or ponds bordering on the state, marshes, water courses, and other bodies of water, natural or artificial.”* ~~and waters of the United States as defined in 40 CFR 122.2.~~

(t) “Water budget” means *a balance of the mass of water entering, leaving, and stored within a hydrologic system.*

(~~vu~~) “Water well board” means the board ~~that~~ *established under RSA 482-B:3 to license water well contractors and pump installers and otherwise* regulates the construction of water wells under We 100-1000, ~~as authorized under RSA 482-B.~~

(~~wv~~) “Water-related natural resource” means a natural resource that is dependent on water.

(~~xw~~) “Well” means “well” as defined in RSA 485-C:2, XVII, namely “a hole or shaft sunk into the earth to observe, sample, or withdraw groundwater.”

(~~yx~~) “Wellhead” means the ~~conveyance or conveyances~~ *constructed opening* through which, ~~and location where,~~ groundwater reaches the land surface, such as ~~the~~ *a* well casing, wellfield collector, or spring collection box.

(zy) “Wetland” means “*wetlands*” *as defined in RSA 482-A:2, X, namely* “an area that is inundated or saturated by surface *water* or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions ~~as defined by Wt 101.88.~~” Wetlands include, ~~but are not limited to,~~ swamps, marshes, bogs and similar areas.

(~~az~~) “Withdrawal” means the removal of groundwater for any purpose.

~~Env Ws 388.03 Major Withdrawal Designation Criteria. A large withdrawal shall be designated a major withdrawal when:~~

(a) ~~The maximum average day withdrawal in a 30 day period is 144,000 gallons per day or more; and~~

(b) ~~The maximum, 24 hour withdrawal is 57,600 gallons per day or more, but the maximum average day withdrawal in a 30 day period is less than 144,000 gallons per day and the department has denied, suspended, or revoked minor withdrawal designation under Env Ws 387.~~

~~Env Ws 388.04-Env-Wq 403.04 Requirements-Process for Major-New Large Groundwater Withdrawals~~ ***Preliminary Application.***

(a) ~~Unless a large withdrawal for which the maximum 30 day average will be less than 144,000 gallons per day has been permitted as a minor groundwater withdrawal pursuant to Env Ws 387, all entities shall obtain a major withdrawal permit in accordance with paragraph (c) below prior to starting a large withdrawal.~~

(b) ~~Prior to starting a new withdrawal for which the maximum 30 day average will equal or exceed 144,000 gallons per day, all entities shall obtain a major withdrawal permit in accordance with paragraph (c) below.~~

(ea) ~~To obtain and maintain~~ ***apply for*** a permit to develop a new ***large groundwater*** withdrawal, the applicant shall ~~complete the following process:~~

(1) ~~Demonstrate the need for the withdrawal by completing a conservation management~~

~~plan and description of need in accordance with Env Ws 388.05;~~

~~(2) — Develop a conceptual hydrologic model of the withdrawal in accordance with Env Ws 388.06;~~

~~(3) — Complete a preliminary water resource and use inventory in accordance with Env Ws 388.07;~~

~~(4) — Estimate the effects of the withdrawal on water resources and uses in accordance with Env Ws 388.08;~~

~~(5) — Design a withdrawal testing program in accordance with Env Ws 388.09;~~

~~(6I) Submit a *large groundwater* major withdrawal permit *preliminary* application prepared in accordance with Env Ws 388.10-Env-Wq 403.05 to the department;~~

~~(72) Perform public notification in accordance with Env Ws 388.11; *As required by RSA 485-C:21, II, send a complete copy of the preliminary application via certified mail to each municipality and public water supplier in the potential impact area; and*~~

~~(3) *If a public hearing is held pursuant to RSA 485-C:21, III, attend the public hearing to provide information on the application.*~~

~~(8) — If desired, request and attend a pre testing conference with the department in accordance with Env Ws 388.12;~~

~~(9) — Complete withdrawal testing in accordance with Env Ws 388.13;~~

~~{ subparagraph (c)(10) has been moved and renumbered as Env-Wq 403.13(a)(2) }~~

~~{ subparagraph (c)(11) has been moved and renumbered as Env-Wq 403.13(a)(3) }~~

~~{ subparagraph (c)(12) has been moved and renumbered as Env-Wq 403.13(a)(4) }~~

~~{ subparagraph (c)(13) has been moved and renumbered as Env-Wq 403.13(a)(7) }~~

~~{ subparagraph (c)(14) has been moved and renumbered as Env-Wq 403.13(a)(5) }~~

~~{ subparagraph (c)(15) has been moved and renumbered as Env-Wq 403.13(a)(6) }~~

~~{ subparagraph (c)(16) has been moved and renumbered as Env-Wq 403.21(b) }~~

~~(17) Maintain the conditions of the written permit issued by the department by completing the following activities as required by stipulations in the permit or as otherwise required by Env Ws 388:~~

~~a. Implement an impact monitoring and reporting program in accordance with Env Ws 388.20;~~

~~b. Implement impact mitigation in accordance with Env Ws 388.21;~~

~~c. Implement any additional permit conditions established by the department necessary to ensure that adverse impacts do not occur;~~

~~{ (17)d. has been moved and renumbered as (d), below }~~

~~e. Submit an application for permit renewal in accordance with Env Ws 388.26, 90 days prior to the date of permit expiration; and~~

~~f. Continuously meter all withdrawals and report the withdrawal volumes in accordance with requirements of the permit.~~

~~(d) — Where a change in permit conditions is desired, the permittee shall request modification of the permit in accordance with Env Ws 388.25.~~

~~(e) — The permittee shall comply with any modifications to the permit made by the department in accordance with Env Ws 388.25.~~

~~(f) — Where data available to the department reveals that major withdrawal requirements are not being, or cannot be met, the department shall suspend the major withdrawal permit in accordance with Env Ws 388.23.~~

(b) Upon receipt of a preliminary application pursuant to (a)(1), above, the department shall proceed in accordance with RSA 485-C:21, III through V and Env-Wq 403.12.

(~~g-c~~) All information submitted as ~~part of the designation request~~ ***by the applicant*** that is material to the final decision of the department ***shall be based on information and data that is:***

- (1) ***Available at the time*** ~~on the permit application is submitted; and~~
- (2) ***Believed by the applicant to*** ~~shall be: (1) True; (2) Complete; and (3) Not~~ misleading.

~~Env-Ws 388.04(c)(17)-(d):~~ ***If any changes to the applicant's ownership or address occur at any time during the application process, the applicant shall*** ~~Notify the department of the change in writing within 30-10 days of any-the change in ownership or address;~~

~~Env-Ws 388.10-Env-Wq 403.05~~ **Major-Large Groundwater Withdrawal Permit Preliminary Application.**

(a) ~~The applicant shall submit a major withdrawal permit application to the department prior to the start of all large withdrawals not granted minor designation status under Env-Ws 387, and to renew a major withdrawal permit.~~

(~~ba~~) ***Subject to (b), below, t***~~The large groundwater withdrawal permit preliminary application required by Env-Wq 403.04(a)(1) shall include:~~

(~~21~~) The name, mailing address, and ***daytime*** telephone number of the applicant ***and, if the applicant is other than an individual, the name, daytime telephone number and, if available, e-mail address of the individual who will serve as the contact person for purposes of the application;***

(~~42~~) The maximum 24-hour withdrawal volume for which the new withdrawal permit is being requested;

(3) ***A water conservation plan prepared in accordance with Env-Wq 2101;***

(~~34~~) ~~The conservation management plan and~~ A description of ***use need*** prepared in accordance with ~~Env-Ws 388.05-Env-Wq 403.06;~~

(~~45~~) ~~The A~~ conceptual hydrologic model of the withdrawal prepared in accordance with ~~Env-Ws 388.06-Env-Wq 403.07;~~

(~~56~~) ~~The figure A~~ ***delineation*** of the estimated ***potential impact-study*** area and a description of how it was delineated using the conceptual hydrologic model, ***prepared*** in accordance with ~~Env-Ws 388.06-Env-Wq 403.07;~~

(7) ***A preliminary inventory of contamination sources completed in accordance with Env-Wq 403.08;***

(~~68~~) ~~The A~~ preliminary inventory of water resources and uses in the ***potential impact-study*** area completed in accordance with ~~Env-Ws 388.07-Env-Wq 403.09;~~

(~~79~~) A description of withdrawal effects estimated in accordance with ~~Env-Ws 388.08-Env-Wq 403.10;~~

~~(810)~~ A description of the withdrawal testing program design prepared in accordance with ~~Env-Ws 388.09~~ ***Env-Wq 403.11***;

{subparagraph (9) has been moved and renumbered as subparagraph (12)}

{subparagraph (10) has been moved and renumbered as paragraph (b)}

(11) For a new groundwater source of bottled water where a pre-testing conference is being requested, the information required ~~in accordance with Env-Ws 389.10~~ ***by Env-Dw 303.10***; and

~~(12) For a new withdrawal not for a public water supply or bottled water where a pre-testing conference is requested, a written request prepared in accordance with Env-Ws 388.12.~~

~~(912) A description of activities being performed to comply with the notification requirements under RSA 485-C:14-a as described in Env-Ws 388.11 including the inventory of water uses and~~ ***list of the names and mailing addresses of the municipalities and public water supplies-suppliers*** being notified ***pursuant to RSA 485-C:21, III.***;

~~(10b) As provided in RSA 485-C:21, II, f~~For a community water supply system, a preliminary report prepared in accordance with ~~Env-Ws 379.13~~; ***Env-Dw 302.13 shall be submitted as the application.***

(c) The preliminary large groundwater withdrawal permit application shall be stamped and signed by an individual possessing either a professional geologists license issued in accordance with RSA 310-A:118-139 or a professional engineers license issued in accordance with RSA 310-A:2-27.

~~Env-Ws 388.05-Env-Wq 403.06~~ Conservation Management Plan and Description of Need-Use.
The description of use required by Env-Wq 403.05(a)(4) shall identify:

~~(a) The applicant shall prepare a water conservation management plan and description of need to demonstrate the efficient use of, and need for, the proposed withdrawal in the permit application completed in accordance with Env-Ws 388.10 for the 10-year duration of the permit that may be issued pursuant to Env-Ws 388.23~~

~~(b) The conservation management plan and description of need shall be presented in the application completed in accordance with Env-Ws 388.10 for a major withdrawal permit.~~

~~(c) The plan shall identify:~~

(a) The purpose of the proposed large groundwater withdrawal;

(4b) Other existing water sources currently used by the applicant, if any;

(c) If applicable, the previously assigned permitted production volumes, established safe yields, or the known capacity of the applicant's other water sources; and

(2d) The current and aAnticipated daily and annual demand for water including maximum, minimum, and average withdrawal rates and volumes. durations;

~~(3) Factors that control water demand such as:~~

- ~~a. Consumer choice;~~
- ~~b. Delivery contracts;~~
- ~~c. Manufacturing runs;~~
- ~~d. Seasonal occupancy; and~~

- ~~e. Precipitation;~~
- ~~(4) Projected growth in the demand for water and a description of the factors that control the growth in demand for water;~~
- ~~(5) Alternative sources of water;~~
- ~~(6) The ability to store water to reduce peak withdrawals; and~~
- ~~(7) The volume of water needed versus the number of and type of institutions either served by the water, or number of items produced or manufactured with the water.~~
- (d) The plan shall contain an analysis of water conservation measures including the following:
 - ~~(1) A description of measures being implemented to conserve water;~~
 - ~~(2) A discussion of the feasibility of using additional water conservation measures including a description of the potential to reduce quantities of water withdrawn through reuse, recycling, and reduction of wasted water;~~
 - ~~(3) For a public water system, a description of the status of the system's compliance with the operation criteria of Env Ws 360 and the maintenance requirements of Env Ws 362;~~
 - ~~(4) For a public water system, a description of the system's use of, and planning for, the following conservation practices:~~
 - ~~a. Customer metering;~~
 - ~~b. Leak detection and repairs;~~
 - ~~c. Low flow plumbing fixtures;~~
 - ~~d. Restricting non-essential uses such as watering lawns, washing cars, and filling swimming pools;~~
 - ~~e. Industrial reuse and recycling;~~
 - ~~f. Adopting a water conservation rate structure which may include surcharge penalties;~~
 - ~~g. Conducting or requiring residential, commercial, and industrial water audits;~~
 - ~~h. Public education; and~~
 - ~~i. Any other measure determined by the public water supplier to be cost effective; and~~
 - ~~(5) For a non-public system withdrawal:~~
 - ~~a. A description of the use and planning of water conservation measures which are not essential to the product or service design such as floor washing methods, leak and overflow management at a manufacturing facility, or any other type of water conservation management practices or measures implemented;~~
 - ~~b. Measures for reducing water use essential to product or service design, such as reuse, loss reduction, or increased storage to reduce peaks; and~~
 - ~~c. The cost effectiveness of water conservation measures and a schedule for any new measures planned.~~

~~Env Ws 388.06-Env Wq 403.07~~ ***Conceptual Hydrologic Model of the Withdrawal and Potential Impact Area.***

(a) The applicant shall include a conceptual hydrologic model of the withdrawal in the major withdrawal permit application completed in accordance with Env Ws 388.10: ***required by Env Wq 403.05(a)(5) shall:***

~~(b1) The conceptual hydrologic model shall bBe developed by a person who by education and experience is able to quantitatively analyze and interpret hydrology.~~ ***qualified professional;***

~~(e2) The conceptual hydrologic model description shall iIdentify the sources of information used to develop the model;~~ ***and***

(3) Be prepared as specified in (b) through (j), below.

(~~eb~~) The conceptual hydrologic model shall be based on information including but not limited to:

- (1) A summary of the results ~~from~~ ***of*** any hydrogeologic investigations conducted on site to date;
- (2) Historic water level data;
- (3) Department records for existing water users and resources including testing and production reports, ***as available***;
- (4) Published reports ***and maps***;
- (5) ~~National Natural Resource Conservation Service maps, ***as applicable***; and~~
- (6) ***Hydrogeologic mapping information such as surficial material, United States geological survey geologic, bedrock lineament, and stratified drift aquifer maps. bedrock or other remote sensing analysis; and***
- (7) ***Geophysical data, if available.***

(~~dc~~) Where historic environmental data is used to develop the conceptual hydrologic model, ***it such data*** shall be adjusted to account for any major land use changes that have occurred.

{ paragraph (e) has been moved and renumbered as (a)(2), above }
{ paragraph (f) has been moved and renumbered as (g), below }
{ paragraph (g) has been moved and renumbered as (f), below }

(~~hd~~) ***As required by RSA 485-C:21, V-e(a) and (b), the*** ~~Conceptual hydrologic model pumping conditions shall be based upon the withdrawal operating continuously for~~ ***on the assumption of 180-days of continuous operation of the withdrawal at maximum rates*** ~~withdrawal amounts without~~ ***direct groundwater recharge to groundwater*** from rainfall or snowmelt.

(~~ie~~) The conceptual hydrologic model shall include:

- (1) A description of the geology and geomorphologic history of the region including ***the governing hydrogeologic characteristics of the bedrock and surficial*** geologic formations, ***such as*** the chronology and mechanisms of ***origin and*** change, grain size distribution, and bedrock fracture characteristics;
- (2) Generalized geologic cross-sections through the region, including at least one through the well ***or withdrawal*** site, based on available information such as well logs, geologic reports, maps, and subsurface data; and
- (3) Delineated extents of the ***potential impact study area and its components, and a description of how the delineated potential impact area meets the requirements of RSA 485-C:21, V-e.*** ~~with the assumption of a conceptual hydrologic model condition of 180 days of continuous pumping at maximum volumes without recharge from rainfall or snowmelt, including all of the following items:~~
 - a. ~~The maximum extent of the cone of depression created by the withdrawal;~~
 - b. ~~The maximum extent of the recharge area for the withdrawal; and~~
 - c. ~~The downgradient area of the withdrawal.~~

(~~gf~~) The conceptual hydrologic model shall identify data needed to refine the model to complete the report required in ~~Env-Ws 388.17~~ ***Env-Wq 403.19***.

(~~fg~~) Where data gaps are identified during the development of the conceptual hydrologic model, the model shall:

- (1) Identify the data gaps and their significance to understanding the ***potential*** impacts of the proposed withdrawal; and
 - (2) Estimate the reasonably suspected hydrologic scenario(s) associated with the withdrawal that could occur given the known and unknown model parameters.
- (~~j~~) ~~The downgradient area of the withdrawal shall include:~~
- ~~(1) The area where water taken by the withdrawal would flow if the withdrawal did not operate;~~
 - ~~(2) The area that will provide water to the downgradient area when the withdrawal is operating; and~~
 - ~~(3) The point where the amount of water to be withdrawn is negligible when compared to the amount of water crossing the boundary using one of the following methods:~~
 - ~~a. An existing or new delineation of a watershed large enough so that the size of the entire study area for the withdrawal is at least 10 times the size of the recharge area for the withdrawal;~~
 - ~~b. An existing or new delineation of a watershed where the amount of water crossing the downgradient boundary, that is, leaving the study under current conditions, is at least 10 times the amount to be withdrawn; or~~
 - ~~c. An alternative method of estimating a study area provided it:~~
 - ~~1. Relies on conservative assumptions;~~
 - ~~2. Is demonstrated as appropriate for the site by testing results; and~~
 - ~~3. Is clearly explained and justified using test results in the report developed pursuant to Env-Ws 388.17.~~

(~~kh~~) The estimate ***extents*** of the ***potential impact*** ~~study~~ area and each of its components shall be presented on a map as described below:

- (1) The map shall be at a scale of 1:24,000 or 1:25,000, ***or at a scale that gives greater detail***;
 - (2) The base map information shall wholly depict the data included on a United States ~~Geologic Survey (USGS)~~ ***Geologic Survey (USGS)*** topographic map ~~or a department geographical information system map~~; and
 - (3) The map ~~figure~~ shall include a map title, date, scale, and north arrow.
- (~~hi~~) A description of the hydrologic cycle and a water budget calculation for the ***potential impact*** ~~study~~ area shall be prepared that describes:
- (1) The amounts and timing of precipitation, runoff, storage, recharge, and discharge;
 - (2) The distribution and availability of water necessary to maintain natural resources, existing water uses, and the proposed withdrawal; and
 - (3) The location and amounts of natural and artificial loss of water, consumption,

discharge, and recharge of water to and from the ***potential impact***~~study~~ area.

(~~my~~) A comprehensive description of the groundwater flow regime ***for the potential impact area*** that describes hydraulic boundaries, recharge ~~patterns~~***characteristics***, and the interaction of water bodies associated with the withdrawal shall be prepared that includes:

- (1) ***Hydrologic*** ~~Conditions~~ at the water table, in any confining or semi-confining layers of the overburden aquifer, and in ***the*** bedrock;
- (2) The occurrence of groundwater flow both in horizontal and vertical directions, under average, non-pumping, and conceptual hydrologic model-based operating conditions;
- (3) The magnitude and direction of vertical and horizontal hydraulic gradients, ***under average, non-pumping, and conceptual hydrologic model-based operating conditions***;
- (4) Hydraulic influences of regional groundwater flow from all aquifers and surface water bodies, or other water resources in ***hydraulic*** communication with the proposed withdrawal; and
- (5) Preferential groundwater flow pathways caused by the properties of the deposits ***or bedrock***.

(~~nk~~) The conceptual hydrologic model and ~~its~~***the estimated extents of the potential impact*** study area ~~estimate~~ shall be refined in accordance with ~~Env-Ws 388.14~~***Env-Wq 403.15*** and presented in the report required by ~~Env-Ws 388.17~~***Env-Wq 403.18*** based on results from withdrawal testing performed in accordance with ~~Env-Ws 388.13~~***Env-Wq 403.14***.

Env-Wq 403.08 Preliminary Inventory of Contamination Sources.

(a) ***The preliminary inventory of contamination sources required by Env-Wq 403.05(a)(7) shall be prepared in accordance with this section.***

(b) ***An inventory of known and potential contaminant sources shall be completed for an area that extends a distance of 1,000 feet outside of the estimated limit of the cone of depression that is developed based on the assumption of 180 days of continuous operation of the withdrawal at maximum rates without direct recharge to groundwater from rainfall or snowmelt.***

(c) ***The contaminant source inventory shall be used to estimate withdrawal effects in accordance with Env-Wq 403.10.***

(d) ***The contamination source inventory shall:***

- (1) ***Be completed before the withdrawal test performed in accordance with Env-Wq 403.14;***
- (2) ***Be compiled from a search of the following information sources:***
 - a. ***Records at the department;***
 - b. ***Records at the municipalities; and***
 - c. ***A windshield survey;***

(3) ***Identify and describe all known and potential contamination sources, by providing the following information for each known and potential source of contamination:***

- a. The site name and physical address;***
- b. The name and mailing address of each property owner and operator;***
- c. For each known source of contamination, a description of the nature and extent of contamination and the status of any site investigation or remedial action; and***
- d. For each potential source of contamination, the type of potential contamination source using descriptions such as those in RSA 485-C:7, II.***

~~Env-Ws 388.07~~ ***Env-Wq 403.09 Preliminary Inventory of Water Resources and Uses Inventory.***

(a) ~~The applicant shall complete an inventory of water resources and uses for in the~~ ***potential impact study area delineated pursuant to Env-Ws 388.06, required by Env-Wq 403.05(a)(8) shall:***

(1) Be prepared in accordance with this section;

~~(h2) The inventory shall identify information sources and describe efforts to collect information pertaining to water uses and resources within the~~ ***potential impact study area identified in Env-Ws 388.06, pursuant to Env-Wq 403.07; and***

~~(b3) The inventory shall be used to estimate withdrawal effects in accordance with Env-Ws 388.08~~ ***Env-Wq 403.10, and identify the applicable institutions that are public water suppliers required to be notified of the proposed withdrawal in accordance with Env-Ws 388.11 pursuant to RSA 485-C:21, II.***

~~(eb)~~ The inventory ***of water resources and uses*** shall be based on the following:

- (1) Department records of other water uses and resources;
- (2) Published reports;
- (3) Municipal and public inventories, ***tax maps***, and records; and
- (4) A visual survey conducted by a ~~person who by education and experience is able to quantitatively analyze and interpret hydrology, or a New Hampshire certified soil scientist~~ ***qualified professional.***

~~(dc)~~ The ***water resource component of the*** inventory shall:

(1) Identify the type and location of each water-related natural resources in the potential impact study area, including surface waters, wetlands, springs, vernal pools, and any other water-related natural resources that might be influenced by the withdrawal; and

(2) Include the results of a query of the database of rare species and exemplary natural communities maintained by the NH department of resources and economic development, natural heritage bureau.

(ed) The ***water use component of the*** inventory of water uses shall identify the ***use, the purpose of the use, an estimate of the volume of the use, the tax map and lot number of the site on which the use occurs, and the name and mailing address of each property owner and operator for each of the*** following ***water uses***:

- (1) Public water supply withdrawals and impoundments;
- (2) Registered water users including withdrawals, recharges, deliveries, and releases;
- (3) Permitted surface water discharges;
- (4) Permitted groundwater discharges;
- (5) Areas served by public water supply systems and the locations of their withdrawals;
- (6) Areas served by public sewer and the locations of the discharge;
- (7) Private wells within ***an area that extends a distance of*** 1,000 feet ***outside*** of the ***estimated limit of the*** cone of depression associated with the withdrawal; and
- (8) ***Any o***ther water uses that might be influenced by the withdrawal.

~~(f) The inventory of water uses shall identify the site address and property owner's or operator's name and address of each water use.~~ merged into (d) intro

~~(g) The inventory of water uses shall identify the purpose and estimate the volume of each water use.~~ merged into (d) intro

{ paragraph (h) has been moved and renumbered as (a)(2), above }

(e) ***To the extent the information is available in records of the department, provided by the well owner, or otherwise known, the inventory of private wells compiled pursuant to (d)(7), above, shall include the following information:***

- (1) ***The installation date of the well and the name and license number of the well installer;***
- (2) ***The type of well and its specifications, including overall depth, casing depth, depth to water in the well, depth to bedrock, well diameter, and well yield;***
- (3) ***Well pump size, depth, and age;***
- (4) ***The total number of wells on the property;***
- (5) ***The number of individuals served by the well;***
- (6) ***A description of water treatment equipment installed, if any;***
- (7) ***A description of water quantity or water quality problems with the well; and***
- (8) ***A description of the most recent maintenance of the well or pump, including the date(s) the maintenance was performed.***

(~~i~~f) The inventory shall be presented on ~~a~~***the*** maps as described below:

(1) ~~The map shall be at a scale of 1:24000 or 1:25000;~~

(~~2~~1) ~~The A base map information shall that wholly depicts the data included on a United States geologic survey USGS topographic map at a scale of 1:24,000 or 1:25,000, or at a scale that gives greater detail or a department geographical information system map; and~~

(2) ***A current tax map; and***

(3) The map figures shall include a map title, date, scale, and north arrow.

~~Env Ws 388.08~~***Env-Wq 403.10*** Estimation of Withdrawal Effects.

(a) The applicant shall identify and estimated ~~the~~***the*** effects of the ***proposed*** withdrawal on water resources and uses in the ***potential impact*** study area ***required by Env-Wq 403.05(a)(8)*** and shall provide this information in the major withdrawal permit application identified in ~~Env Ws 388.10~~***be completed in accordance with this section.***

(b) The estimate of withdrawal effects shall:

(1) ~~Be~~***Be*** based on the conceptual hydrologic model and the ***potential impact*** study area estimate identified in ~~Env Ws 388.06~~***pursuant to Env-Wq 403.07;***

(~~e~~2) The estimate shall ~~be~~***Be*** prepared by a person who by education and experience is able to quantitatively analyze and interpret hydrology ***qualified professional;***

(~~d~~3) The estimate shall ~~a~~***Account*** for current land use patterns;

(4) ***Evaluate the likelihood of affecting the extent of known or potential groundwater contamination identified in the inventory prepared pursuant to Env-Wq 403.08; and***

(~~e~~5) The estimate shall ~~e~~***Quantify*** impacts on water resources and uses ***identified*** in the inventory prepared pursuant to ~~Env Ws 388.07~~***Env-Wq 403.09.***

(~~f~~e) The applicant shall describe ***any*** limitations to the estimate of the withdrawal effects identified in ~~Env Ws 388.06(f)~~***as a result of the, including but not limited to those arising from data gaps or the complexity of the geology.***

~~Env Ws 388.09~~***Env-Wq 403.11*** Withdrawal Testing Program Design.

(a) ~~A~~***The*** withdrawal testing program ***required by Env-Wq 403.05(a)(9)*** shall be designed to:

(1) ~~E~~***Estimate*** the effects of the withdrawal under conceptual hydrologic model ***pumping*** conditions, that is, 180-days of continuous operation ***of the withdrawal*** at maximum rates without ***direct*** recharge ***to groundwater*** from rainfall or snowmelt;

(~~e~~2) The program shall be designed to ~~a~~***Address*** critical data gaps, limitations, or insufficiencies identified in ~~Env Ws 388.06~~***Env-Wq 403.07*** and ~~Env Ws 388.08~~***Env-Wq 403.09*** that are necessary to complete ***the*** impact assessments required ***by RSA 485-C:21 and these rules; and***

(3) ***Provide the data specified in (e), below.***

(b) The program shall be designed ***by a qualified professional*** and performed by ***or under the direction of a person who by education and experience is able to quantitatively analyze and interpret hydrology-qualified professional;***

{ paragraph (c) has been moved and renumbered as (a)(2), above }

(~~dc~~) The ***proposed withdrawal testing*** program shall include ~~at a minimum,~~ the measurement ***and observation of a representative number and variety of water*** resources and uses such that the data can be used to estimate effects on all ***water*** resources and users that might be adversely impacted.

(~~ed~~) For all wellheads, the ***withdrawal*** testing production rate shall equal or exceed the rate requested in the permit application.

(~~f-e~~) The ***withdrawal testing*** program shall be designed to provide data to:

(1) Demonstrate production of the maximum withdrawal volumes requested ***for each proposed withdrawal or well;***

(2) Identify the response of the aquifer(s) and other ~~interconnected~~ ***hydrologically related*** water resources to pumping at the ***withdrawal or*** wellhead;

(3) Refine the conceptual hydrologic model and ***potential impact*** study-area delineation in accordance with ~~Env-Ws 388.14~~ ***Env-Wq 403.15;***

(4) Quantify the impacts of the withdrawal and conclude if the impacts meet the criteria for adverse impacts as specified by ~~Env-Ws 388.18~~ ***Env-Wq 403.22;***

(5) Develop an impact monitoring and reporting program, if necessary, in accordance with ~~Env-Ws 388.20~~ ***Env-Wq 403.24;***

(6) Develop an impact mitigation program, if necessary, in accordance with ~~Env-Ws 388.21~~ ***Env-Wq 403.29;***

(7) Establish values or ranges of values for environmental factors that will, during the period of the permit, ***be used to assess whether*** ~~Reveal that~~ withdrawal effects are consistent with original estimates; and ~~b. Indicate if whether~~ ***whether*** adverse impacts are or may be occurring; ***and***

(~~8~~) ~~Develop a program for impact mitigation for any adverse impacts identified in Env-Ws 388.21 which might occur; and~~

(~~98~~) Determine a revised permanent production volume for the withdrawal, if necessary, to ensure that adverse impacts ~~do not occur~~ as identified in ~~Env-Ws 388.18~~ ***RSA 485-C:21, V-c do not occur.***

(g) For a bottled water withdrawal, the ***withdrawal testing*** program shall comply with pumping test requirements for new groundwater sources of bottled water specified in ~~Env-Ws 389~~ ***Env-Dw 303.***

(h) For all other withdrawals, the ***withdrawal testing*** program shall comply with pumping test requirements for large production wells for community water systems specified in ~~Env-Ws 379~~ ***Env-Dw***

302.

(i) Withdrawal testing and evaluation methods, procedures, data, laboratory reports, and other supporting documentation shall be presented in the ***final*** report ~~specified in Env-Ws 388.17~~ ***required by Env-Wq 403.18.***

(j) As part of the withdrawal testing, the applicant shall submit a written request ***for permission to access the property and monitor water levels*** to:

(1) ~~All water users located within 1,000 feet of the proposed withdrawal; and that requests permission to access their property to monitor the following during withdrawal testing:~~

- ~~a. The operating and associated extraction rates of their withdrawal; and~~
- ~~b. Water levels associated with their withdrawal point.~~

(2) ***Representative water users located within an area that extends a distance of 1,000 feet outside of the estimated limit of the cone of depression that is developed based on 180 days of continuous operation of the withdrawal at maximum rates without direct recharge to groundwater from rainfall or snowmelt.***

(k) ***For any water user targeted for water level monitoring in accordance with (j), above, that is a public water supply or a registered water user under RSA 488:3, the request to monitor water levels shall include a request to monitor extraction rates.***

(l) ***If the inventory performed in accordance with Env-Wq 403.08 identifies the potential to influence the extent of known or potential groundwater contamination, the applicant shall collect water quality samples from representative locations both prior to and during the withdrawal testing program in accordance with the following:***

(1) ***When water quality sampling is required prior to the withdrawal test, the results of the pre-withdrawal testing water quality samples shall be submitted to the department at least 30 days prior to the start of the withdrawal test; and***

(2) ***When water quality sampling is required during the withdrawal test, the results of the water quality samples collected during the withdrawal test shall be submitted to the department with the final report prepared in accordance with Env-Dw 403.18.***

~~Env-Ws 388.11 Public Notification.~~ {now covered by Env-Wq 403.04(a)(2)}

~~(a) The applicant shall submit one copy of the major permit application to each municipality and public water supplier in the study area delineated pursuant to Env-Ws 388.06.~~

~~(b) Public notification of the proposed large withdrawal shall be completed in accordance with RSA 485 C:14 a.~~

~~(c) Notification of municipalities and public water suppliers downgradient of the recharge area for withdrawals in a river valley aquifer or similar environment may be limited to those within 1000 feet of the river bank.~~

~~(d) If a public hearing is requested pursuant to RSA 485 C:21 III, the notice shall be posted in 2 public places at least 7 days before the public hearing at each of the following locations:~~

- ~~(1) The municipality in which the proposed withdrawal is located; and~~
- ~~(2) The municipality in which the entity requesting the public hearing is located.~~

~~Env-Ws 388.12 Optional Pre-Testing Conference.~~

~~(a) The applicant may submit a request for a pre-testing conference in writing and shall include all~~

~~information and materials required for the permit application in accordance with Env-Ws 388.10.~~

~~(b) The department shall meet with the applicant's representative to review the proposal of work.~~

~~(c) The applicant or the applicant's representative shall have the education and experience to quantitatively analyze and interpret hydrology in order to review a detailed proposal of work to be performed in accordance with these rules.~~

~~(d) A pre-testing conference shall be conducted within 30 days after the receipt of the written request.~~

~~(e) If an optional pre-testing conference is requested and conducted in accordance with this section, then the department shall provide comments and recommendations regarding the withdrawal testing design developed pursuant to Env-Ws 388.09 within 15 working days after the public comment period ends pursuant to Env-Ws 388.11.~~

Env-Wq 403.12 Approval of a Large Groundwater Withdrawal Permit Preliminary Application.

(a) Upon receiving a large groundwater withdrawal application under Env-Wq 403.04(a)(1), the department shall determine whether the application is administratively complete, namely that the applicant has submitted everything required by Env-Wq 403.05.

(b) If the application does not contain everything required by Env-Wq 403.05, the department shall notify the applicant in writing of what is missing.

(c) If the application does contain everything required by Env-Wq 403.05, the department shall, within 10 business days, notify the applicant in writing, with a copy to the local governing body as required by RSA 485-C:21, II, that the application is administratively complete.

(d) The department's determination that an application is administratively complete shall not be construed as a determination that the application is approvable as submitted.

(e) Upon determining that an application is administratively complete, the department shall:

(1) Conduct a public hearing in accordance with RSA 485-C:21, IV, if one is requested in accordance with RSA 485-C:21, III; and

(2) Review the application to determine whether the criteria in (h), below, are met.

(f) The department shall notify the applicant in writing of its decision on the preliminary groundwater withdrawal application within 45 days of the close of the written public comment period required by RSA 485-C:21, V.

(g) In the written notice sent pursuant to (f), above, the department shall:

(1) Approve the application, if the criteria specified in (i), below, are met;

(2) Specify the area(s) in which the application is deficient, if the application is deficient in any of the criteria in (i), below; or

(3) Deny the application, if the applicant fails to correct deficiencies identified pursuant to (2), above.

(h) If the application is not denied, the notice sent pursuant to (f), above, shall advise the applicant whether, based on the information provided in the preliminary application, a waiver will be required for a specific requirement under these rules.

(i) ***The department shall approve a large groundwater withdrawal preliminary application only if all of the following criteria are met:***

- (1) ***The application contains everything required by Env-Wq 403.05;***
- (2) ***The information contained in the application is complete and correct;***
- (3) ***The department concludes that the withdrawal testing program submitted pursuant to Env-Wq 403.11 is likely to accurately depict actual operating conditions and related influences on affected water resources and uses;***
- (4) ***The water conservation plan required by Env-Wq 2101 has been submitted to the department; and***
- (5) ***All public notification requirements specified in RSA 485-C:21 have been completed.***

(j) ***The preliminary application approval shall expire 4 years from the date of approval if the final report required by Env-Wq 403.18 has not been received by the department.***

(k) ***No large groundwater withdrawal shall be developed after expiration of the corresponding preliminary application approval. If the applicant wishes to develop the large groundwater withdrawal after expiration, the applicant shall submit a new application in accordance with this part. If there have been no changes in the applicable requirements or the relevant information, the applicant may submit the same application as was previously approved provided the applicant submits updated inventories of contaminant sources and water resources and uses.***

Env-Wq 403.13 Proceedings Subsequent to Approval of Preliminary Application.

(a) ***After the applicant receives approval pursuant to Env-Wq 403.12, the applicant shall:***

- (1) ***Complete withdrawal testing in accordance with Env-Wq 403.14;***

~~Env-Ws 388.04(e)-(102)~~ Refine the conceptual hydrologic model and ~~study~~***potential impact*** area for the withdrawal in accordance with ~~Env-Ws 388.14~~***Env-Wq 403.15;***

~~Env-Ws 388.04(e)-(113)~~ Update and revise the ***contamination source inventory and the*** inventory of water resources and uses based on testing results, in accordance with ~~Env-Ws 388.15~~***Env-Wq 403.16;***

~~Env-Ws 388.04(e)-(124)~~ Describe impacts to water resources and uses in accordance with ~~Env-Ws 388.16~~***Env-Wq 403.17;***

~~Env-Ws 388.04(e)-(145)~~ When observations under operating conditions are necessary to validate test results and verify that adverse impacts will not occur, ~~the applicant shall develop and obtain approval of an impact monitoring and reporting program in accordance with Env-Ws 388.20~~***Env-Wq 403.24;***

~~Env-Ws 388.04(e)-(156)~~ When an adverse impact as identified in ~~Env-Ws 388.18~~***Env-Wq 403.22*** is anticipated to occur as a result of the withdrawal, the applicant or permittee shall complete the following:

a. Reduce the proposed production volume of the withdrawal in accordance with ~~Env-Ws 388.14(b)~~ ***Env-Wq 403.15(b)*** to a level where no adverse impacts are anticipated; or

b. Design and implement mitigation measures in accordance with ~~Env-Ws 388.21~~ ***Env-Wq 403.29***;

~~Env-Ws 388.04(c)-(137)~~ Submit a ***final*** report completed in accordance with ~~Env-Ws 388.17~~ ***Env-Wq 403.18 to the department***;

(8) Send a complete copy of the final report via certified mail to each municipality and public water supplier in the potential impact area; and

(9) If a public hearing is held pursuant to RSA 485-C:21, V-a, attend the public hearing to provide information on the application.

(b) Upon receipt of a final report pursuant to (a)(7), the department shall proceed in accordance with RSA 485-C:21, V-a and Env-Wq 403.19.

~~Env-Ws 388.13~~ ***Env-Wq 403.14*** Withdrawal Testing.

(a) Withdrawal testing performed to meet the requirements of this part shall not be undertaken unless and until the department approves the preliminary application in accordance with Env-Wq 403.12.

~~(ab)~~ Withdrawal testing shall be completed pursuant to ~~Env-Ws 388.09~~ ***as specified in the plan prepared in accordance with Env-Wq 403.11.***

~~(bc)~~ Withdrawal testing observations, results, and interpretations shall be presented in the report completed in accordance with ~~Env-Ws 388.17~~ ***Env-Wq 403.18.***

~~(ed)~~ When the withdrawal testing design identified in ~~Env-Ws 388.09~~ ***program developed in accordance with Env-Wq 403.11*** includes the monitoring of water levels of any existing sources ~~listed within identified in~~ the inventory of water ***users and*** resources, permission to access these locations shall be obtained by the applicant ~~in the following manner:~~ ***by sending a written notice of the forthcoming test to each owner and each user of such sources.***

~~(1)~~ All owners of the sources identified in the withdrawal testing design specified in ~~Env-Ws 388.09~~ shall be identified and notified in writing of the forthcoming test by the applicant;

~~(2e)~~ The ~~notification~~ ***notice sent pursuant to (d), above,*** shall:

~~a.~~ ***(1) Include the items from an example*** ~~informational~~ form letter supplied by the department;

~~b.~~ ***(2) Request monitoring permission and a written response;***

~~c.~~ ***(3) Define responsibility to prepare the source for monitoring;***

~~d.~~ ***(4) State the monitoring requirements;***

(5) Inform the source user and owner that the applicant will collect a water sample for bacteria from the source both prior to and following the installation or use of monitoring

equipment in the source;

~~e.~~(6) Include an offer from the applicant to disinfect and reseal the source when the monitoring ends;

~~f.~~(7) Inform the source user and owner that the applicant will supply potable water or cease the ~~withdrawal pump~~ test should their water supply needs not be met; ~~and~~

~~g.~~(8) Identify ***the*** name and ***telephone*** number of the ~~contact person~~ ***individual who should be contacted*** in the event of a water outage during testing; ***and***

(9) Be sent via certified mail with return receipt requested, or by another method that demonstrates receipt of the notice, at least 14 days prior to commencing the withdrawal testing program.

(3f) If the applicant is unable to monitor a source of water of a potentially impacted user, the estimate of the ~~interference~~ ***effect*** of the withdrawal on the source shall:

~~a.~~(1) Be based upon data collected from other nearby wells that represent the sources that could not be monitored; or

~~b.~~(2) Be based on an estimate using data collected during the withdrawal testing and analytical techniques; ~~and~~.

~~(4) If the water level in the well of another water user is monitored during withdrawal testing, the applicant shall:~~

~~a. Inform the source user and owner that the pump test will be ceased should their water supply needs be affected by the test; and~~

~~b. If requested by the water user, disinfect and reseal the source of water when the monitoring ends.~~

(g) Bacteria samples taken pursuant to (e)(5), above, shall be submitted for analyses for coliform bacteria and analyzed at a laboratory accredited pursuant to Env-C 300 using a method that enumerates the number of bacteria colonies present in the samples collected.

~~Env-Ws 388.14~~ ***Env-Wq 403.15 Conceptual Hydrologic Model Refinement.***

(a) The ***applicant shall refine the*** conceptual hydrologic model developed in accordance with ~~Env-Ws 388.06~~ ***Env-Wq 403.07*** ~~shall be refined~~ based on results of the withdrawal testing completed in accordance with ~~Env-Ws 388.13~~ ***Env-Wq 403.14.***

(b) If, after the withdrawal testing, the applicant elects to reduce the ~~originally proposed~~ withdrawal volume proposed in ~~Env-Ws 388.10~~ ***pursuant to Env-Wq 403.05(a)(2)***, the applicant shall refine the conceptual hydrologic model to reflect the ~~proposed~~, revised ***proposed*** withdrawal rate.

(c) Conceptual hydrologic model refinement shall include a refinement of the ***potential impact*** study area estimated in accordance with ~~Env-Ws 388.06~~ ***Env-Wq 403.07.***

(d) The refined conceptual hydrologic model and ***potential impact*** study area delineation shall be presented with supporting documentation in the ***final*** report ~~specified in Env-Ws 388.17~~ ***prepared in accordance with Env-Wq 403.18.***

~~Env Ws 388.15-Env-Wq 403.16~~ ***Contamination Source and Water Resource and Use Inventory Updates and Revisions.***

(a) The ***applicant shall update the*** preliminary ***contamination source*** inventory completed in accordance with ~~Env Ws 388.07-Env-Wq 403.08~~ shall be updated if the inventory is more than 90 days old.

(b) ***The applicant shall update the preliminary water resource and use inventory completed in accordance with Env-Wq 403.09 if the inventory is more than 90 days old.***

(~~bc~~) The ***applicant shall revise the*** preliminary ***contamination source inventory and water resource and use*** inventory shall be revised to reflect any expansion or decrease in the ***estimated limits of the cone of depression and potential impact*** study area after ~~it~~ ***the conceptual hydrologic model*** is refined in accordance with ~~Env Ws 388.14-Env-Wq 403.15~~.

(~~ed~~) The ***applicant shall present the*** updated and revised inventory***ies*** shall be presented in the ***final*** report ~~completed~~ ***prepared*** in accordance with ~~Env Ws 388.17-Env-Wq 403.18~~.

~~Env Ws 388.16-Env-Wq 403.17~~ ***Impact Description.***

(a) The anticipated impacts from the withdrawal shall be described in the ***final*** report ~~completed~~ ***prepared*** in accordance with ~~Env Ws 388.17-Env-Wq 403.18~~.

(b) The description shall be completed by a ~~person who by education and experience is able to quantitatively analyze and interpret hydrology~~ ***qualified professional***.

(c) Impacts shall be defined using the refined conceptual hydrologic model withdrawal conditions specified in ~~Env Ws 388.14-Env-Wq 403.15~~ and the ***contamination source inventory prepared in accordance with Env-Wq 403.08 and the*** water use and resource inventory prepared in accordance with ~~Env Ws 388.07-Env-Wq 403.09, as updated and revised in accordance with~~ and ~~Env Ws 388.15-Env-Wq 403.16~~.

(d) The description shall be based on results from the withdrawal testing program and refined conceptual hydrologic model.

(e) Impacts shall be quantified to the extent necessary to: ~~(1) Determine if~~ ***whether*** adverse impacts might occur; ***and, (2) If*** adverse impacts potentially might occur, ***to:***

(1) ~~D~~develop a monitoring and reporting program to accompany the operation of the proposed withdrawal to provide data that assesses ~~if~~ ***whether*** adverse impacts are ***occurring*** or will occur;

(32) Develop mitigation measures as required by ~~Env Ws 388.21-Env-Wq 403.29~~ for adverse impacts that might occur; or

(43) Determine a revised permanent production volume for the withdrawal, if necessary; to ensure that adverse impacts as specified by ~~Env Ws 388.18-Env-Wq 403.22~~ do not occur.

~~Env Ws 388.17-Env-Wq 403.18~~ ***Final Report.***

(a) ~~In order to obtain a permit for the withdrawal,~~ ***After withdrawal testing pursuant to Env-Wq 403.14 is completed,*** the applicant shall submit a ***final*** report to the department ~~after withdrawal testing is~~

~~completed pursuant to Env Ws 388.13~~ that includes the following:

- (a1) All information and materials required in ~~Env Ws 388.05~~ ***Env-Wq 403.05*** through ~~Env Ws 388.16~~ ***Env-Wq 403.17***, ***including any updates to the name, mailing address, and daytime telephone number of the applicant and, if the applicant is other than an individual, the name, daytime telephone number and, if available, e-mail address of the individual who will serve as the contact person for purposes of the application;***
- (b2) Where operating information is necessary to ensure adverse impacts do not occur, the impact monitoring and reporting program prepared in accordance with ~~Env Ws 388.20~~ ***Env-Wq 403.24***; and
- (e3) When adverse impacts are anticipated, an impact mitigation program prepared in accordance with ~~Env Ws 388.21~~; ***Env-Wq 403.24***.
- (d) ~~For a community water supply system, the report shall also include the final report prepared in accordance with Env Ws 379.22; and~~
- (e) ~~For a new groundwater source of bottled water, the report shall also include the report prepared in accordance with Env Ws 389.19.~~
- (b) ***The final report submitted in accordance with this section shall be stamped and signed by a person possessing one of the following licenses:***

- (1) ***Professional geologists license issued in accordance with RSA 310-A:130; or***
- (2) ***Professional engineers license issued in accordance with RSA 310-A:18.***

~~Env Ws 388.23~~ ***Env-Wq 403.19*** ***Procedure and Criteria to Issue, Deny, or Suspend a Major Final Decisions on Large Groundwater Withdrawal Permit Applications.***

(a) ***Subject to (b), below, the department shall approve the application for a large groundwater withdrawal permit and issue the permit, or deny the application, a large groundwater permit or permit renewal in writing within 45 days of receipt of the report prepared in accordance with Env Ws 388.17 the close of the written public comment period required pursuant to RSA 485-C:21.***

(b) ***If the report is not complete or correct, the department shall request revisions to the final report unless the information submitted suggests that the criteria in (c), below, cannot be met.***

(bc) The department shall issue or renew a major ***a large groundwater*** withdrawal permit described pursuant to ~~Env Ws 388.23~~ under the following circumstances ***only if***:

- (1) ~~When~~ ***The information provided in the application and final report produced in accordance with Env Ws 388.17 is complete and correct; and***
- (2) ~~When~~ ***The information provided in the application and final report produced in accordance with Env Ws 388.17 demonstrates that the withdrawal will:***
 - a. ***Will n***Not produce adverse impacts; or
 - b. ***Will r***Result in impacts that can and will be mitigated, provided:

1. There is sufficient information to verify that any adverse impacts that occur as a

result of the withdrawal will not be:

- (i) An adverse impact that may occur immediately; ~~and-or~~
- (ii) An irreversible impact; and

2. A monitoring and reporting program is implemented in accordance with ~~Env-Ws 388.20-Env-Wq 403.24.~~

(3) All public notifications required by RSA 485:C-21 have been completed; and

(4) The water conservation plan submitted by the applicant in accordance with Env-Wq 2101 or Env-Ws 390, as applicable based on the date of submittal, has been approved.

~~(ed)~~ The department shall not issue a new, or renew an existing major ***large groundwater*** withdrawal permit if it is ~~demonstrated~~ ***the department determines, after a thorough review of the application, final report, and all public comments received, that a-the proposed*** withdrawal will result in adverse impacts which cannot or will not be mitigated.

{paragraph (d) has been moved and renumbered as Env-Wq 403.33(a)}

~~(e)~~ The procedure for suspending and reinstating a major withdrawal permit shall be as follows:

(1) The department shall notify the permittee of the date, time, and place of a hearing at which the permittee shall be given an opportunity to show cause why the permit should not be suspended;

~~(2) The hearing shall be conducted in accordance with RSA 541-A:31;~~

{subparagraph (e)(3) has been moved and renumbered as Env-Wq 403.33(c)}

{subparagraph (e)(4) has been moved and renumbered as Env-Wq 403.33(d)}

{subparagraph (e)(5) has been moved and renumbered as Env-Wq 403.33(e)}

~~(f)e)~~ ***Appeals of the department's decision to issue or deny a large groundwater withdrawal permit*** shall provide the applicant with an opportunity for a hearing ~~RSA 541-A:31~~ if the permit is denied ***be as specified in RSA 485-C:21, VI.***

~~Env-Ws 388.24-Env-Wq 403.20~~ ***Withdrawal Permit.*** ~~When Each permit issued by the department issues a permit to operate for a large groundwater withdrawal pursuant to Env-Ws 388.23-Env-Wq 403.19, the permit shall specify the following information:~~

- (a) The name, ***mailing*** address, and ***daytime*** telephone number of the permittee;
- (b) The permit expiration date, which shall be ~~10 years from the date the permit was issued as specified in Env-Wq 403.32;~~
- (c) The permit number;
- (d) The maximum permissible water withdrawal volumes, for the purpose of mitigating impacts from the withdrawal;
- (e) The ***stated purpose of the withdrawal provided*** ~~need demonstrated in the conservation plan prepared in accordance with Env-Ws 388.05-pursuant to Env-Wq 403.06;~~
- (f) A schedule for monitoring and reporting production from, ~~and static water levels in the well withdrawal or wells; and that includes the following:~~

- ~~(1) Cumulative flow meter readings at the start of each operating month;~~
- ~~(2) Static groundwater level in feet below a fixed point, at the start and in the middle of each operating month; and~~
- ~~(3) Time and date of each reading.~~

(g) ***Other conditions, as needed, to ensure that the requirements and intent of this part are met.***

Env-Wq 403.21 Permittee Obligations. Upon receipt of a permit issued pursuant to Env-Wq 403.19, the permittee shall be obligated to:

(a) ***Maintain current information at the department relative to the permittee's address and contact information;***

(b) ***Implement the impact monitoring and reporting program in accordance with Env-Wq 403.24;***

~~Env-Ws 388.04(c)(16)(c) When an~~ ***verified*** ~~adverse impact occurs as identified in Env-Ws 388.18 as a result of the withdrawal, design and implement mitigation measures in accordance with Env-Ws 388.21~~ ***Env-Wq 403.29; and***

(d) ***Report to the department as specified in Env-Wq 403.23 whenever an unmitigated adverse impact has occurred or is occurring; and***

(e) ***Implement the other conditions of the permit issued in accordance with Env-Wq 403.20.***

~~Env-Ws 388.18~~ ***Env-Wq 403.22 Adverse Impact Criteria.***

(a) For all large ***groundwater*** withdrawals, adverse impacts shall be ~~impacts due to reduction in the availability of water caused by the withdrawal as defined in RSA 485-C:21, V-c.~~

(b) For all large ***groundwater*** withdrawals, adverse impacts shall not ~~be~~ ***include*** impacts due to:

- (1) Poor operation or maintenance;
- (2) Infrastructure failure;
- ~~(3) Increase in volume of water withdrawn by water users not owned or operated by the permittee; or~~
- ~~(4)~~ (3) Alteration of the environment beyond the control of the permittee.

~~(c) For all major withdrawals, adverse impacts shall include the following:~~

- ~~(1) A reduction in the withdrawal capacity of a private water supply well of a single residence as a result of the reduction of available water that is directly associated with the withdrawal, including:~~
 - ~~a. Any reduction in capacity for wells with a capacity less than water well board recommended optimum minimum flow capacity of 4 gallons per minute for 4 hours before the withdrawal;~~
 - ~~b. A reduction in capacity below 4 gallons per minute for 4 hours, for wells that had a capacity greater than 4 gallons per minute for 4 hours, before the withdrawal; or~~
 - ~~c. A reduction in capacity where the well still has a capacity between 4 gallons and 10 gallons per minute for 4 hours and the user provides information indicating that the~~

- reduction in flow has resulted in the inability to meet their water needs;
- (2) ~~A reduction in a public, drinking water supply below the minimum withdrawal rates required per consumer determined by the following:~~
- ~~a. Minimum daily amounts of drinking water shall be determined per use based on the design flow criteria established for public water supply systems under Env Ws 372; or~~
 - ~~b. Where it is verified that such wells were unable to produce the design flow before the withdrawal began, the adverse impact shall be any reduction in the ability to produce water;~~
- (3) ~~A reduction in a water supply that is used for a multiple-unit dwelling residence, but that is not a public water supply, that results in the inability to continue established activities or maintain existing water capacity requirements;~~
- (4) ~~A reduction in a private, non-residential, non-drinking water supply that results in the inability of a commercial, industrial or retail facility to continue established services or production volumes;~~
- (5) ~~A reduction in the ability of a registered water user to produce volumes equivalent to the average daily withdrawal for a specific calendar month as determined by discharge measurements and reports made to the department in accordance with the water user requirements under Env Wr 700;~~
- (6) ~~Reduction in surface water levels or flows that will, or does cause a violation of surface water quality regulations set forth in Env Ws 1700;~~
- (7) ~~A net loss of values for submerged lands under tidal and fresh waters and its wetlands as set forth in RSA 482-A;~~
- (8) ~~The inability of permitted surface water or groundwater discharges to meet permit conditions;~~
- (9) ~~A reduction of river flows below acceptable levels established pursuant to RSA 483; or~~
- (10) ~~The contamination of groundwater obtained from wells or surface waters from contaminated groundwater whose flow has been altered by the withdrawal.~~
- (d) ~~A private residential well with a capacity greater than 10 gallons per minute for 4 hours after the withdrawal will not be considered adversely impacted.~~

~~Env Ws 388.19~~ ***Env-Wq 403.23*** Adverse Impact Reporting and Response.

- (a) The permittee shall report to the department within 5 ***calendar*** days after discovering an unmitigated adverse impact that is occurring or has occurred.
- (b) The department shall notify the permittee within 5 ***calendar*** days of the time when the department observes, or another entity reports, an unmitigated adverse or unanticipated impact.
- (c) At the written request of any entity, the department shall review any reports of adverse impacts including hydrologic data supporting the occurrence or potential occurrence of an adverse impact, and determine whether a claim of adverse impact is valid.
- (d) ***Within 21 calendar days of the date a report meeting the criteria specified in (c), above, is received,*** ~~The department shall notify the permittee and the entity reporting an adverse impact whether an unanticipated or adverse impact has occurred within 21 days of the time when a report meeting the criteria specified in paragraph (c) above is received.~~
- (e) Where the status of an unanticipated impact is not clear, the applicant shall gather information needed to quantify the impact and determine its status relative to ***the*** ~~adverse impact criteria defined under Env Ws 388.18~~ ***specified in Env-Wq 403.19,*** and provide this information to the department.

(f) ~~A~~ ***The permittee shall mitigate a*** verified adverse impact ~~shall be mitigated in accordance with Env-Ws 388.21-Env-Wq 403.29.~~

~~(g) The permittee shall design and implement mitigation measures when an adverse impact occurs as identified in Env-Ws 388.18 as a result of the withdrawal.~~

~~Env-Ws 388.20-Env-Wq 403.24~~ ***Impact Monitoring and Reporting Program.***

(a) A permittee shall conduct ***an*** impact monitoring and reporting program when:

(1) Available information, including work completed in accordance with these rules, is not sufficient to verify that adverse impacts from the large withdrawal will not occur, provided the available information does not suggest that an impact ~~is~~:

- a. ~~Is i~~Irreversible; or
- b. Will occur immediately; and

(2) ~~It~~ ***Such a program*** is necessary to ensure that impact mitigation identified in ~~Env-Ws 388.21-Env-Wq 403.29~~ is effective in preventing adverse impacts from the withdrawal.

(b) The monitoring and reporting program shall monitor representative sites where the data collected can be used to ensure adverse impacts do not occur to water resources or users identified pursuant to ~~Env-Ws 388.07(d) and (e) and 388.15-Env-Wq 403.09 and Env-Wq 403.16.~~

(c) ***The monitoring and reporting program shall include wetlands monitoring in accordance with Env-Wq 403.25, groundwater monitoring in accordance with Env-Wq 403.26, surface water monitoring in accordance with Env-Wq 403.27, or water level monitoring in accordance with Env-Wq 403.28, or any combination thereof as needed based on the criteria in (a), above.***

{ paragraph (c) has been moved and renumbered as Env-Wq 403.25}
{ paragraph (d) has been moved and renumbered as Env-Wq 403.26}
{ paragraph (e) has been moved and renumbered as Env-Wq 403.27}
{ paragraph (f) has been moved and renumbered as Env-Wq 403.28}

(d) ***The proposed impact monitoring and reporting program shall:***

(1) ***Be presented in the final report; and***

(2) ***Include a proposed implementation schedule in relation to the issuance date of the withdrawal permit or initiation of the withdrawal.***

~~(ge)~~ Monitoring shall be adjusted during the permit period in accordance with permit modification procedures and criteria ~~pursuant to Env-Ws 388.24~~ ***specified in Env-Wq 403.31.***

~~(hf)~~ Monitoring results shall be presented in a tabular and graphic format and interpreted by a ~~person who by education and experience is able to quantitatively analyze and interpret hydrology~~ ***qualified professional.***

~~(i-g)~~ The impact monitoring and reporting program shall be a condition of the withdrawal permit.

~~(j-h)~~ Monitoring results shall be reported as specified by permit conditions.

Env-Wq 403.25 Wetlands Monitoring.

~~Env Ws 388.20-(ea)~~ Where ~~w~~Wetlands monitoring and reporting is ~~shall be~~ conducted, it shall be completed as follows: ***in accordance with (b) through (e), below.***

~~(1b)~~ An initial survey shall be conducted by ~~a person~~***an individual*** who by education and experience is able to qualitatively and quantitatively assess wetland ecosystems; ***and who is a certified wetland scientist pursuant to RSA 310-A:81-97.***

~~(2c)~~ The initial survey of wetlands shall ***be performed during the growing season and*** include the following:

~~a.(1)~~ An inventory and map of wetland flora species;

~~b.(2)~~ An inventory and map of soil types;

~~c.(3)~~ A general description of the stratigraphy of geologic deposits;

~~d.(4)~~ A general description of soil moisture, its source, and mechanisms of change; ~~and~~

(5) A general description of indicators of wetland hydrology, including but not limited to drainage patterns, watermarks, and visual observation of saturated soils or inundation.

~~e.(6)~~ A general description of the function of the wetland as part of the natural ecosystem, including:

~~1a.~~ Removal of sediment from runoff;

~~2b.~~ Improvement or stabilization of water quality;

~~3c.~~ Reduction in peak flow; and

~~4d.~~ Maintenance of wildlife habitat; ***and***

~~(3d)~~ Monitoring of the characteristics of the wetlands identified in the initial survey shall be performed during the growing season.

(e) When wetlands monitoring includes water level monitoring, the monitoring point locations and reference point elevations shall be established in accordance with Env-Wq 403.28.

Env-Wq 403.26 Groundwater Monitoring.

~~Env Ws 388.20-(da)~~ When ~~g~~Groundwater monitoring and reporting is necessary, the monitoring shall include the following: ***be conducted in accordance with (b) through (f), below.***

~~(1b)~~ Monitoring of ~~w~~Water levels at the wellhead and at ***such*** other observation points ***as were necessary identified pursuant to Env-Wq 403.24 shall be monitored*** at a frequency sufficient to complete an evaluation of potential impacts associated with the withdrawal;

~~(2c)~~ Monitoring of the ~~v~~Volumes withdrawn from the permitted withdrawal ***shall be monitored*** at a frequency appropriate to assess the potential impacts associated with a withdrawal; ~~and~~.

~~(3d) Monitoring of~~ The operating parameters of other water uses that might be contributing to impacts to water resources within the ***potential impact study area shall be monitored***, including:

- ~~a.(1)~~ Water levels at wellheads;
- ~~b.(2)~~ Operating schedules; and
- ~~c.(3)~~ Withdrawal amount.

(e) Water quality of other water uses that may be influenced by the withdrawal shall be monitored at a frequency appropriate to assess the potential for impacts to occur as a result of the withdrawal.

(f) When groundwater monitoring includes water level monitoring, the monitoring point locations and reference point elevations shall be established in accordance with Env-Wq 403.25.

Env-Wq 403.27 Surface Water Monitoring.

(a) Surface water monitoring shall be conducted in accordance with (b) through (d), below.

~~Env-Ws 388.20 (eb)~~ When surface water monitoring and reporting is necessary, ~~t~~The monitoring shall include an initial survey that incorporates the following:

- (1) An initial inventory and mapping of aquatic flora and fauna species and habitat;
 - (2) Identification of ***the*** factors ~~which~~***that*** control the elevation of water levels; ***and***
 - (3) A general description of anticipated seasonal fluctuations in temperature profiles and nutrient balances; ~~and~~.
- ~~(4c) A procedure for~~ Long-term monitoring of surface waters, ***shall*** include~~ing~~:
- ~~a.(1)~~ Monitoring of water levels in lakes or ponds at a frequency that is adequate to assess the potential occurrence of impacts to these water bodies as a result of the withdrawal;
 - ~~b.(2)~~ Measurement of changes in stream ~~discharge flow across~~***along*** a representative ***section of each water course, or stream reach, that may be*** influenced by the ~~major~~ withdrawal, at a frequency that is adequate to assess the potential occurrence of impacts to these water ***resource*** ~~bodies~~ as a result of the withdrawal, using methods that are: ~~1. Accurate; and 2. Technically defensible; and~~
 - ~~c.(3)~~ Monitoring of instream or other submerged habitat to identify the health of aquatic ecosystems.

(d) When surface water monitoring includes water level monitoring, the monitoring point locations and reference point elevations shall be established in accordance with Env-Wq 403.28.

Env-Wq 403.28 Water Level Monitoring.

~~Env-Ws 388.20 (f-a)~~ ***Where*** ~~When monitoring of the water levels in other groundwater withdrawals nearby~~ monitoring is required, the work shall be ~~conducted~~***completed*** in accordance with

~~Env-Ws 388.13(c)(1)-(c)(4)~~ ***(b) through (i), below.***

(b) For monitoring wells or test wells installed as part of the well site or permit monitoring program, the location and reference elevation for each well shall be established as follows:

- (1) The coordinate system for the horizontal location shall be referenced to the North American Datum of 1983 (NAD83) with an accuracy of no less than 0.1 foot;***
- (2) The vertical reference point elevation shall be referenced to the North American Vertical Datum of 1988 (NAVD88) with an accuracy of no less than 0.1 foot; and***
- (3) The location and elevation assigned pursuant to (1) and (2), above, shall be established by land survey conducted by a land surveyor licensed in accordance with RSA 310-A:55-74.***

(c) For groundwater withdrawals at private or other water supply wells, the location and reference elevation for each well shall be established as follows:

- (1) The horizontal location shall be established using global positioning system (GPS) technology referenced to NAD83 and reported in units of degrees and decimal minutes of latitude and longitude with at least 3 decimal places of precision, or an alternative map or method that provides a higher degree of accuracy; and***
- (2) The vertical reference point elevation shall be established by estimation from a 1:24,000-scale USGS topographic map or an alternative map or method that provides a higher degree of accuracy.***

(d) For piezometers or staff gages installed as part of the well site or permit monitoring program, the location and reference elevation shall be established as follows:

- (1) The horizontal location shall be established using global positioning system (GPS) technology referenced to NAD83 and reported in units of degrees and decimal minutes of latitude and longitude with at least 3 decimal places of precision, or an alternative map or method that provides a higher degree of accuracy; and***

(2) The vertical reference point elevation shall be established by:

- a. Reference to a surveyed vertical reference point when one is available at the well site or monitoring well network;***
- b. Estimation from a 1:24,000-scale USGS topographic map, if no surveyed elevation is available; or***
- c. An alternative map or method that provides a higher degree of accuracy.***

(e) The horizontal coordinates and reference point elevations established in accordance with (b) through (d), above, shall be provided in a table that specifies the coordinate system used and the associated units of measure.

(f) The table created pursuant to (e), above, shall be provided to the department:

- (1) In the final report required by Env-Wq 403.18; or***

(2) ***Prior to initiation of the withdrawal when installation of an observation point is a condition of the permit issued in accordance with Env-Wq 403.20.***

(g) ***The vertical reference point for piezometers and staff gages established in accordance with (d), above, shall be checked annually against a surveyed reference point or other permanent reference mark, when available, and corrected to ensure that the reference point elevation has not changed over time.***

(h) ***Water level measurements collected from all monitoring points shall be recorded in feet or meters relative to the reference point elevation established in (b) through (d), above.***

(i) ***Recording of water levels in water supply wells that are included in the monitoring program shall be conducted in accordance with Env-Wq 403.14(e).***

~~Env-Ws 388.21~~ ***Env-Wq 403.29*** ~~Procedures and Criteria for Impact Mitigation.~~

(a) The permittee shall immediately implement an impact mitigation program for withdrawals when:

(1) A withdrawal permit requires mitigation from the start of operation to prevent adverse impacts anticipated during the permit application process;

(2) An impact monitoring and reporting program conducted in accordance with ~~Env-Ws 388.20~~ ***Env-Wq 403.24*** reveals the potential occurrence of an adverse impact; or

(3) The department determines that a report of unanticipated or adverse impact is valid as defined by ~~Env-Ws 388.18~~ ***Env-Wq 403.22*** and reported in accordance with ~~Env-Ws 388.19~~ ***Env-Wq 403.23***.

(b) ~~The permittee shall perform the following activities:~~ ***Once an adverse impact is verified in accordance with ~~Env-Ws 388.19~~ Env-Wq 403.23, the permittee shall:***

(1) Submit a description of the impact based on observations to the department within 14 ***calendar*** days of adverse impact notification under ~~Env-Ws 388.19~~ ***Env-Wq 403.23***;

(2) Submit an impact mitigation program description in accordance with (c), below, for department approval within 60 ***calendar*** days of adverse impact notification under ~~Env-Ws 388.19~~ ***Env-Wq 403.23***; and

(3) Where the impact mitigation program is a condition of the permit and meets adverse impact thresholds identified in the permit, immediately begin the impact mitigation program designed for permit approval pursuant to ~~Env-Ws 388.17(e)~~ ***Env-Wq 403.18(a)(3)***.

(c) A mitigation program shall include one or more of the following ***measures, as necessary to mitigate adverse impacts:***

(1) Implementation of additional water conservation measures;

(2) Reduction in withdrawal volumes, including cessation of the withdrawal except where necessary for fire protection or residential drinking water;

(3) Replacement of sources for adversely impacted users in accordance with ~~Env-Ws 388.22~~ ***Env-Wq 403.30; and***

(4) Other action(s) necessary to ~~mitigate~~ ***address the specific*** adverse impacts;

(5d) ***The mitigation program also shall include:***

(1) Periodic monitoring and reporting at a frequency necessary to substantiate the effectiveness of the mitigation activities; and

(62) A schedule for the implementation of the activities listed in (c)(4)-(5), above.

(de) Adherence to a mitigation program, where required, shall be a condition of the permit or become a condition of the withdrawal permit in accordance with permit modification procedures under ~~Env-Ws 388.25~~ ***Env-Wq 403.31***.

~~Env-Ws 388.22~~ ***Env-Wq 403.30*** Procedures and Criteria for Source Replacement of Sources Adversely Impacted by Withdrawal.

(a) Where a water supply source is adversely impacted as identified in ~~Env-Ws 388.18~~ ***Env-Wq 403.23***, the permittee shall develop a program for providing an alternative water supply ***to each user of the source*** in accordance with ~~the criteria and procedures described in this section (b) through (i), below.~~

(b) ~~An adversely impacted water user shall be supplied with~~ ***The permittee shall supply, to each user of the adversely-impacted source,*** a quantity of water sufficient ~~to provide an equivalent volume of water that to that which~~ was available prior to ~~operating~~ the withdrawal.

(c) The ~~water source~~ ***user of the adversely-impacted source*** shall not be charged for ***any of the*** initial capital costs ~~for providing of being provided with~~ an alternative water supply, ***including but not limited to the following:***

(d) ~~The initial capital cost for providing an alternate water supply shall include all costs associated with any of the following:~~

(1) Water source development, including:

a. Hydrogeologic investigation, including test well drilling as appropriate; and

b. Source construction;

(2) Water treatment equipment;

(3) Control building;

(4) Water storage facility;

(5) Water distribution system;

(6) Customer connection to the system;

(7) All costs associated with engineering in developing the water system, including ~~the following~~ ***but not limited to:***

- a. Design engineering; and
 - b. Field engineering including the verification of quality workmanship;
 - (8) All legal costs associated with the establishment of the water system; and
 - (9) All other costs relating to developing a new water supply not otherwise categorized and identified above.
- (ed) The source replacement program shall:
- (1) Identify other withdrawals in the recharge area for the adversely impacted source;
 - (2) Define the performance standards at which alternative supply will be provided to the user, including the following:
 - a. Location and type of source;
 - b. Method of delivery;
 - c. Minimum and maximum volumes and rates of delivery;
 - d. Water chemistry; and
 - e. Any water quality treatment or testing practices;
 - (3) Provide a schedule by which alternative supply will be provided;
 - (4) Estimate the initial capital costs associated with establishing the alternative supply; and
 - (5) Estimate the costs to the user of the alternative supply after it is established by the permittee, including the per-unit cost and projected annual costs.
- (e) The need for installation of drinking water treatment equipment associated with the source replacement plan performance standard required by (d)(2), above, shall be based on results of water quality sampling prior to and following source replacement activities for the following parameters:***
- (1) Regulated inorganic chemical contaminants listed in Env-Ws 314 or successor rules in subtitle Env-Dw;***
 - (2) Regulated volatile organic chemical contaminants listed in Env-Ws 315 or successor rules in subtitle Env-Dw;***
 - (3) Regulated contaminants with secondary maximum contaminant levels listed in Env-Ws 316 or successor rules in subtitle Env-Dw;***
 - (4) Uranium;***
 - (5) Radon; and***
 - (6) Other compounds based on the assessment of potential contaminant sources in the***

vicinity of the withdrawal.

(f) *Subject to (g), below, water quality treatment equipment shall be provided whenever:*

(1) *A contaminant is detected in the post-source replacement water quality sample at a concentration in excess of a maximum contaminant level established in Env-Ws 311 through Env-Ws 316 or successor rules in subtitle Env-Dw, in which case the water quality treatment equipment shall be designed to reduce the contaminant's concentration to below the maximum contaminant level;*

(2) *A contaminant is detected in the post-source replacement water quality sample at a concentration in excess of a secondary maximum contaminant level established in Env-Ws 311 through Env-Ws 316 or successor rules in subtitle Env-Dw, in which case the water quality treatment equipment shall be designed to reduce the contaminant's concentration to no more than the concentration observed in the pre-source replacement water quality sample; and*

(3) *Radon is detected in the post-source replacement water quality sample at a concentration above 2,000 picocuries per liter when the radon concentration in the pre-source replacement water quality sample was less than 2,000 picocuries per liter, in which case the water quality treatment equipment shall be designed to reduce the contaminant's concentration to less than 2,000 picocuries per liter.*

(g) *Water quality treatment equipment shall not be required if the adversely affected water source is used solely for irrigation for landscaping.*

(h) *The permittee shall not be responsible for implementing source replacement, including water treatment, for a particular water user if that water user does not authorize the implementation of the source replacement program.*

(i) *A list of the water treatment equipment alternatives that are proposed to meet the requirements of (f), above, shall be provided to the department prior to installation. The equipment that has the lowest operation and maintenance cost over a 10-year period shall be selected unless the owner of the adversely-impacted source and the permittee mutually agree to an alternative technology.*

~~Env-Ws 388.25~~ ***Env-Wq 403.31*** Procedure and Criteria for Permit Modifications.

(ea) *The procedures specified in (c) through (h), below, shall apply to any of the following*
~~Potential permit modifications shall include, but not be limited to the following:~~

- (1) *An increase in production monitoring;*
- (2) *An increase in monitoring and reporting of ground water or surface water levels;*
- (3) *A reduction in permitted ***withdrawal*** volumes; ~~and~~*
- (4) *The implementation of an impact mitigation program;*
- (5) *A change in the name or ownership of the permittee; or*
- (6) *Any other change that has no potential to create adverse impacts.*

{ paragraph (a) has been moved and renumbered as (c), below }
{ paragraph (b) has been moved and renumbered as (e), below }

(eb) The permit modification procedures specified in (c) through (h), below, shall not apply to any requested permanent increase in the withdrawal rate or volume. A permittee seeking a permanent increase in the withdrawal rate or volume shall apply for a new minor or major large groundwater withdrawal permit pursuant to Env-Ws 387 and Env-Ws 388-Env-Wq 403.05 when there is any permanent increase in the withdrawal rate.

(ac) The applicant may A permittee seeking a modification as specified in (a), above, to a large groundwater withdrawal permit shall submit a written request to the department to modify a the permit as follows:

(1) A permittee requests a permit modification by submitting a written request to the department; and

(2d) The request submitted pursuant to (c), above, shall explain in detail the following:

(1) The specific modification requested;

(2) The reason(s) for the proposed-requested modification; and

(3) How the permit as modified complies with the criteria for issuance of a permit specified in Env-Wq 403.19.

(be) The department shall modify a permit in response to a request from the permittee when only if it determines that the permittee's request demonstrates that the modified permit complies with the criteria for issuance or renewal of a permit as specified in Env-Ws 388.23-Env-Wq 403.19.

(f) A permit modification request that proposes a change in purpose or use of the withdrawal shall require the submittal of an application for a new permit in accordance with Env-Wq 403.05.

(dg) If the department determines that a permit modification is needed to eliminate or prevent adverse impacts, the department shall initiate a proceeding in accordance with RSA 541-A:30, II, RSA 541-A:31, and the provisions of Env-C 200 relative to adjudicative proceedings. modify the permit to eliminate or prevent adverse impacts after:

(1) Providing an opportunity for a hearing pursuant to RSA 541-A:30, II; and

(2h) Providing The written notice provided to the permittee which pursuant to RSA 541-A:31 shall:

a.(1) Identifies the facility by name, location, and permit number;

b.(2) Explains the action-modification(s) the department proposes to take and the reasons for the proposed action-modification(s);

c.(3) Identifies the department's authority for taking such action; and

d.(4) Lists the Identify, by name, title, mailing address, and telephone number, of the department representative who may be contacted regarding the notice; and

e. Is dated and signed by the director of the department's water division.

{ paragraph (e) has been moved and renumbered as (a), above }

(i) ***As specified in RSA 485-C:21, V-d, the grounds for permit modification shall include to accommodate drought conditions or new withdrawals.***

~~Env-Ws 388.26 Env-Wq 403.32 Procedures and Criteria for Major~~ ***Expiration and Renewal of Large Groundwater Withdrawal Permits-Renewal.***

(a) ***A large groundwater withdrawal permit shall expire 5 years after the date of issuance if the withdrawal is not activated within that time, unless a shorter time is specified in other applicable rules.***

(b) ***If a permitted withdrawal is activated within 5 years of the date of issuance of the large groundwater withdrawal permit, the large groundwater withdrawal permit shall be valid for 10 years from the date of issuance.***

(ac) ~~The~~ Any permittee ***wishing to renew a large groundwater withdrawal permit*** shall submit an application for a permit renewal at least ~~90 days~~ ***one year*** prior to its expiration date.

(bd) ***If no change to the approved withdrawal volume is proposed at the time of permit renewal,***
~~The renewal application shall include: an update of all the information submitted for the expiring permit.~~

(1) ***The name, mailing address, and daytime phone number of the permittee;***

(2) ***The permittee's written certification that no change to the previously-approved withdrawal volume is being sought;***

(3) ***An updated inventory of contaminant sources within an area that extends a distance of 1,000 feet outside of the estimated limit of the cone of depression of the withdrawal;***

(4) ***An updated water user and resource inventory within an area that extends a distance of 1,000 feet outside of the estimated limit of the cone of depression of the withdrawal;***

(5) ***An updated tax map identifying any new lots within the estimated cone of depression of the withdrawal that have been formed since original issuance of the permit, and a description of the water source(s) for the new lots; and***

(6) ***Where monitoring has been performed as part of the permit:***

a. ***A written summary of observations of impacts and any modifications to the impact monitoring program since issuance of the permit; and***

b. ***A written summary of the volume of groundwater produced by the withdrawal since issuance of the permit, together with a description of factors that control production.***

(ee) The renewal application may reference information already contained in the department files if the information has not changed since the last application package submitted and meets the current criteria outlined in these rules.

(f) ***The permit renewal provisions of this section shall not apply if an increase to the approved withdrawal volume is proposed. A permittee seeking an increase in the withdrawal rate or volume shall apply for a new permit in accordance with Env-Wq 403.05.***

(dg) ~~Any permit renewals that has been renewed~~ shall be ***subject to the suspension and revocation*** issued in accordance with the criteria for new permits under Env Ws 388.23 and Env Ws 388.26 ~~provisions specified in Env-Wq 403.33.~~

(h) ***A permit shall be renewed for a period of no more than 10 years, provided, however, that there shall be no limit on the number of renewals that a permittee may request.***

~~Env Ws 388.27 Other Requirements. Applicants and permit holders shall comply with all other relevant state, federal, and local regulations and requirements.~~

Env-Wq 403.33 Suspension or Revocation of Large Groundwater Withdrawal Permits.

~~Env Ws 388.23-(da)~~ The department shall ***initiate an adjudicative proceeding to suspend or revoke an existing major large groundwater*** withdrawal permit when:

- (1) The withdrawal is resulting in adverse impacts which cannot or will not be mitigated;
- (2) ~~If after the issuance of a permit, t~~The department receives information ~~that indicates~~***ing*** that the information upon which the permit was based was not true and complete or was misleading; or
- (3) The ~~applicant~~***permittee*** does not comply with the conditions of the permit issued pursuant to ~~Env Ws 388.20-Env-Wq 403.20.~~

(b) ***Subject to (c), below, to commence a proceeding the department shall proceed in accordance with RSA 541-A:31 and the provisions of Env-C 200 applicable to adjudicative proceedings.***

~~Env Ws 388.23(e)-(3c)~~ The department shall suspend the permit immediately, ~~if it the~~***department*** determines that ***public health, safety or welfare requires*** emergency action ~~is required, the department shall proceed~~ in accordance with RSA 541-A:30, III;

~~Env Ws 388.23(e)-(4d)~~ The department shall suspend the permit ~~a~~After the hearing conducted pursuant to ~~(4b) or (c), above, the department shall suspend the permit if: a. Emergency action is not required; and b. It is verified that that a scenario listed pursuant to one or more of the criteria listed in (da), above, has occurred;~~***been met***, and:

- (1) ***The permittee was not acting in bad faith; and***
- (2) ***The reason(s) for the criteria being met can be corrected so that no criteria are met.***

~~Env Ws 388.23(e)-(5e)~~ The department shall reinstate the permit ~~a~~ suspended ***permit***, pursuant to (3) or (4) above, upon receiving and approving technical data ***after it determines, based on information received*** from the permittee, that demonstrates that the site meets the requirements of Env Ws 388***the criteria listed in (a), above, are no longer present.***

(f) ***After the hearing conducted pursuant to (b) or (c), above, the department shall revoke the permit if it is verified that one or more of the criteria listed in (a), above, has been met and:***

- (1) ***The permittee was acting in bad faith; or***
- (2) ***The reason(s) for the criteria being met cannot be corrected.***

Env-Wq 403.34 Replacing an Existing Large Groundwater Withdrawal.

(a) ***As specified in RSA 485-C:22, I, large groundwater withdrawals from new wells that replace a well or wells installed prior to August 1, 1998 shall not be subject to the requirements of RSA 485-C:14-a and RSA 485-C:21, but rather shall require approval of the department under RSA 485-C:22, III-IV.***

(b) ***As specified in RSA 485-C:22, II, no person shall withdraw 57,600 gallons or more of groundwater from a replacement well or wells over any 24-hour period without the prior approval of the department.***

(c) ***As specified in RSA 485-C:22, III, before the department issues an approval for a large groundwater withdrawal from a replacement well or wells, the person seeking the replacement well(s) shall submit an application to the department to demonstrate that withdrawal from the replacement well or wells will operate and impact water users and resources in substantially the same manner as the well or wells that are being replaced.***

(d) ***As specified in RSA 485-C:22, IV, an application for approval of a replacement well shall contain the following information:***

- (1) ***The name and mailing address of the well owner replacing the well or wells;***
 - (2) ***The address and a map identifying the location of each well being replaced and the location of each replacement well;***
 - (3) ***The construction details for each well being replaced and for each new replacement well, including:***
 - a. ***The depth of each well;***
 - b. ***The length and diameter of well casing and screen in each well; and***
 - c. ***A description of overburden and bedrock lithology for each well being replaced and each new well; and***
 - (4) ***Hydrogeologic information demonstrating that the effects of the replacement well or wells on water users and water resources identified by RSA 485-C:21, V-c will be substantially the same as the well that is being replaced.***
- (e) ***The application for approval also shall contain the following information:***
- (1) ***An explanation of why the withdrawal is being replaced and a description of the its production history and use;***
 - (2) ***A USGS topographic map at a scale of 1:24,000 showing the location of each proposed replacement well and each well being replaced, which may be used in lieu of the map required by (d)(2), above;***
 - (3) ***A site plan at a scale of 1 inch equals 500 feet showing the location of:***
 - a. ***Each replacement well;***

b. Each well being replaced; and

c. All other observation points used in support of the demonstration of replacement well effects required by RSA 485-C:22;

(4) A plan to evaluate the effects of the withdrawal from the replacement well(s) on water users and resources pursuant to RSA 485-C:22; and

(5) A plan to decommission or maintain each well being replaced in accordance with We 600.

(f) For any replacement well used as a water supply source for a community water system, the applicant shall meet all of the requirements of Env-Dw 302.30 in addition to (b), above.

(g) The department shall approve the replacement well provided the information submitted by the applicant demonstrates that the withdrawal from the replacement well or wells will operate and impact water users and resources in substantially the same manner as the well or wells that are being replaced.

(h) The replacement well shall be approved for the permitted withdrawal volume or established capacity of the well being replaced.

(i) The department shall include such conditions in the replacement well approval as are necessary to ensure compliance with applicable requirements of RSA 485-C and these rules.

~~Env-Ws 388.28-Env-Wq 403.35~~ Waivers.

(a) The rules in this ~~section~~***part*** are intended to apply to a variety of conditions and circumstances. It is recognized that strict compliance with all rules prescribed herein might not fit every conceivable situation. An applicant or permit holder ***thus*** may request a waiver of specific rules outlined in this section in accordance with (b)~~-through (f)~~, below.

~~(b) The department shall waive the requirements of Env-Ws 388.03-Env-Ws 388.17 for a withdrawal that is used as a back-up water supply if all of the following criteria are met:~~

- ~~(1) The withdrawal operates no more than 720 hours over a calendar year;~~
- ~~(2) The withdrawal does not adversely impact any other water users or water resources pursuant to Env-Ws 388.18;~~
- ~~(3) The following information is provided to the department in writing prior to using the back-up supply:~~

- ~~a. The location of the proposed back-up withdrawal shown on a map at a scale of 1:24000 or 1:25000;~~
- ~~b. An inventory of water users and resources pursuant to Env-Ws 388.07(c) (i) within 2000 feet of the proposed back-up groundwater withdrawal;~~
- ~~c. Records describing the subsurface hydrogeology in the area of the proposed back-up groundwater withdrawal;~~
- ~~d. The proposed well construction details of the back-up withdrawal including the proposed vertical location and length of screen of the well;~~
- ~~e. The estimated maximum volume of the withdrawal from the back-up supply over any 24-hour period;~~
- ~~f. A description of the primary water source used including the registered water user identification number issued pursuant to Env-Wr 700 in which the back-up groundwater~~

- ~~withdrawal is being developed for; and~~
~~g. A description of the circumstances that would require the back-up groundwater withdrawal to be used;~~
- ~~(4) Within 7 days of using the back-up withdrawal, the applicant provides the department with a written description of the following:~~
- ~~1. An estimate of the total time that the back-up withdrawal will be operated; and~~
 - ~~2. A description of the reason for the operation of the back-up groundwater withdrawal;~~
- ~~(5) The department conducts a hydrologic evaluation of the proposed back-up groundwater withdrawal using the information provided by the applicant in (3) above, and determines that adverse impacts identified in Env Ws 388.18 will not occur as a result of operating the proposed withdrawal;~~
- ~~(6) If sufficient information is not available for the department to determine if adverse impacts identified in Env Ws 388.18 might occur as the result of operating a back-up withdrawal, the applicant completes the following:~~
- ~~a. Obtains additional hydrogeologic information; and~~
 - ~~b. Implements a monitoring and reporting program.~~
- ~~(c) Unless emergency action is required, the department shall suspend the waiver status of a back-up withdrawal after providing an opportunity for a hearing in accordance with RSA 541-A:31 if the permittee does not comply with the requirements in (b), above;~~
- ~~(d) The department shall suspend the permit immediately, if it determines that emergency action is required in accordance with RSA 541-A:30, III;~~
- ~~(e) The department shall waive the requirements of Env Ws 388.03—388.17 for a withdrawal that is a replacement for a withdrawal in existence prior to August 1, 1998 under the following conditions:~~
- ~~(1) The replacement withdrawal is constructed in the following manner:~~
 - ~~a. The replacement well is installed within 50 feet of the existing well;~~
 - ~~b. The replacement well is constructed with a well screen of similar diameter and length;~~
 - ~~c. The well screen is placed within the same vertical location of the existing well; and~~
 - ~~d. The replacement well under pumping conditions will impact groundwater hydraulics in the same manner as the existing well;~~
 - ~~(2) Prior to installing the replacement well, the permittee submits a request for a waiver to the department for the replacement withdrawal that demonstrates compliance with (1), above; and~~
 - ~~(3) The existing well in which the replacement well replaces is no longer operational.~~
- ~~(f) A To request for a waiver, *the person seeking the waiver* shall be: (1) Submitted *the following information* in writing to the department; and (2) Include the following information:~~
- ~~(1) *The name, mailing address, and daytime telephone number of the person requesting the waiver and, if the person is other than an individual, the name and daytime telephone number of an individual who can be contacted regarding the request;*~~
 - ~~a.(2) A description-*Identification* of the site to which the waiver request relates *by applicant name and municipality and, if a permit has already been issued, the permit number;*~~
 - ~~b.(3) A specific reference to-*Identification of* the section of the-*specific* rule for which a-*the* waiver is being sought;~~
 - ~~e.(4) A full explanation of why a waiver is necessary, and demonstration of hardship caused if the rule is adhered to-*including the likely consequences if the waiver is not granted;*~~
 - ~~d.(5) A full explanation of the alternative(s) for which a waiver is sought-*that will be implemented*~~

in lieu of the stated rule requirement, if any, with backup data for support a full explanation of how the alternative(s) will be as protective of public health and the environment, including groundwater quality and quantity, as adhering to the rule; and

(6) *Whether the waiver is needed for a limited time and, if so, what that time period is; and*

~~e-~~(7) A full explanation of how the alternatives for which ***benefits of granting*** a waiver is sought are consistent with the intent of RSA 485:3 and RSA 485-C ***and outweigh the risks or detriments of granting a waiver.***

(gc) The department shall ~~approve a request for~~ ***grant*** a waiver if it finds that:

(1) ~~The alternative(s) proposed, if any, are at least equivalent to the requirements contained in this section, will be as protective of public health and the environment, including groundwater quality and quantity, as adhering to the rule; and~~

(2) *The benefits of granting a waiver* are adequate to ensure that the provisions ~~consistent with the intent of RSA 485:3 and RSA 485-C are met~~ ***and outweigh the risks or detriments of granting a waiver.***

(d) *In granting a waiver, the department shall impose such conditions, including time limitations, as the department deems necessary to ensure that the criteria specified in (c), above, will be met.*

(e) *No waiver shall be granted if the effect of the waiver would be to waive or modify a statutory requirement, unless the statute expressly provides that the requirement may be waived or modified.*

(f) *If a waiver is granted, the waiver shall be made part of the permit.*

~~(h) The department shall not grant any waiver which in its judgment contravenes the intent of any rule.~~

~~(i-g)~~ The department shall issue a written response ~~to~~ ***decision on*** a request for a waiver within ~~30 days~~ ***the response timeframes established in Env-Wq 403.12 if the request is associated with a preliminary application or Env-Wq 403.19 if the request is associated with a final report.*** If the waiver is denied, the denial shall specifically set forth the reason(s) for the denial.

APPENDIX

Rule Section(s)	State Statute(s) Implemented
Env-Wq 403 (see also specific section below)	RSA 485:3, XIII; RSA 485-C:21; RSA 485-C:22
Env-Wq 403.35	RSA 541-A:22, IV